

REMARKS

The present application was filed on November 26, 2003 with claims 1-20. Claims 1-20 remain pending. Claims 1, 19 and 20 are the pending independent claims.

In the outstanding final Office Action dated January 26, 2005, the Examiner rejected claims 1-9, 11 and 13-20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,727,597 (hereinafter “Taylor”).

Applicants acknowledge the indication of allowable subject matter in claims 10 and 12.

In response to the Office Action, Applicants traverse the rejection of claims 1-9, 11 and 13-20.

Independent claim 1 of the present invention recites an integrated circuit device with a die having a peripheral region and an interior region on its top surface. A plurality of bond pads are disposed in the peripheral region of the die, and at least one internal bus is disposed in the interior region of the die. The internal bus distributes power to a plurality of internal node points of the die. At least one bond wire connects at least one of the plurality of bond pads with the at least one internal bus.

Taylor discloses an integrated circuit device having C4 (controlled collapse chip) pads and wire bond pads. Each of the C4 pads is electrically coupled through metal layers and conductive vias to one of the wire bond pads located near the periphery of the integrated circuit device. C4 power connections and ground connections are electrically coupled by traces to one or more wire bond pad power and ground connections, respectively. In order to provide a pad layout that makes it easier to route the electrical connections between the pads, the C4 pads are placed in alignment with the wire bond pads.

Taylor fails to disclose at least one bond wire connecting at least one of a plurality of bond pads, disposed in a peripheral region of the die, with at least one internal bus, disposed in an interior region of the die, as recited in independent claim 1. On page 3 of the final Office Action, the Examiner contends that “Taylor et al disclose at least one bond wire (Fig. 3b) connecting at least one of the plurality of bond pads (304) with the at least one internal bus (360).” Applicants assume that the Examiner is actually referring to FIG. 3C, which shows a cross-sectional side view of an integrated circuit and a possible wire bond connection. However, in column 2, lines 49-52, Taylor

states, “integrated circuit device 300 may be electrically coupled to a package 360 (shown in FIG. 3C) by either of wire bond pads 304, or C4 pads 306.” Thus, element 360 of FIG. 3B represents a power bus, while element 360 of FIG. 3C represents a package. It is apparent that Taylor inadvertently used the same reference numeral, that is, reference numeral 360, to refer to two entirely different structures, a power bus and a package. The Examiner, in formulating the rejection, is relying on a wire bond connection between a bond pad and a package. This is further supported by the fact that element 360 of FIG. 3C is not shown as part of integrated circuit device 300 as it is in FIG. 3B. Thus, assuming *arguendo*, that FIG. 3C of Taylor shows a bond wire (not described in the specification) connecting elements 304 and 360, the respective elements are described as a wire bond pad and a package, and thus, Taylor fails to disclose a bond wire connecting a bond pad with an internal bus.

Additionally, in column 2, lines 64-65, Taylor specifically states that “wire bond pads 304 are coupled to the C4 pads 306 through the metal layers 330 and conductive vias 332.” Further, in column 3, lines 48-50, Taylor discloses that “the wire bond power connections 350 are coupled to the C4 power buses 360 along a metal trace connecting two of the C4 power connections 340.” Therefore, the disclosure of a trace connection instead of a wire bond connection directly teaches away from the invention recited in claim 1 of the present invention.

As described on page 4, lines 5-6 of the specification, in conjunction with an illustrative embodiment of the invention, the wire bond connection from peripheral bond pads to bond pads of the internal buses helps to reduce the overall power distribution voltage drop within the device. Further, as described on page 9, lines 19-27, wire bonding allows for sufficient transmission of power to interior regions of the die without increasing the number of metal layers and provides lower resistivity than traditional metal traces, thereby reducing the power distribution voltage drop that normally occurs in metal traces routed from bond pads to the internal buses of the integrated circuit device.

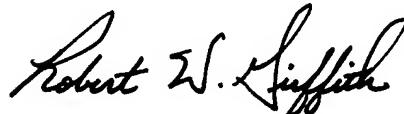
Dependent claims 2-9, 11 and 13-18 are patentable at least by virtue of their dependency on independent claim 1. The patentability of independent claim 1 is described above. Dependent claims 2-9, 11 and 13-18 also recite patentable subject matter in their own right. For example, Taylor fails to disclose: an internal bus comprising bond pads having active circuitry disposed

thereunder, as recited in claim 7; bond pads wire bonded to an internal bus as well as a positive or negative voltage supply terminal of the device, as recited in claims 9 and 11; a bond pad wire bonded to an internal bus and connected to another of the bond pads, as recited in claim 13; and multiple pairs of bond pads comprising a positive voltage supply bond pad and a negative voltage supply bond pad substantially evenly spaced apart in the peripheral region of the die, as recited in claims 17 and 18.

Independent claim 19 recites a die configurable for use in an integrated circuit device having a plurality of bond pads, disposed in the peripheral region of the die, and the at least one internal bus, disposed in the interior region of the die, connectable by at least one bond wire. Independent claim 20 recites a method of constructing an integrated circuit device in which at least one peripheral bond pad is wire bonded to at least one internal bus. Therefore, independent claims 19 and 20 are patentable for reasons similar to those presented above with regard to independent claim 1.

In view of the above, Applicants believe that claims 1-20 are in condition for allowance, and respectfully request withdrawal of the §102(e) rejection.

Respectfully submitted,



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Enclosure(s): Notice of Appeal